|  |  |
| --- | --- |
|  | **DEPARTMENT OF COMPUTER ENGINEERING** |

Assignment No. 1-2-3

|  |  |
| --- | --- |
| Semester | B.E. Semester VIII – Computer Engineering |
| Subject | Data Science Honor |
| Subject Professor In-charge | Prof. Amit Alyani |
| Academic Year | 2024-25 |

|  |  |
| --- | --- |
| Student Name | Deep Salunkhe |
| Roll Number | 21102A0014 |

**Title:** YouTube video sentiment analysis

**Implementation:  
  
1. Introduction**

Social Media Analytics involves extracting meaningful insights from user-generated content on platforms like YouTube, Twitter, and Facebook. **Sentiment analysis** helps determine whether the comments are positive, negative, or neutral, providing valuable feedback for content creators and marketers.

In this experiment, we extract **YouTube comments**, preprocess them using **text mining techniques**, and apply **machine learning classification algorithms** to analyze sentiment.

A screenshot of a computer

AI-generated content may be incorrect.

**2. Extracting YouTube Comments**

**Tools & Methods**

To extract YouTube comments, we use:

1. **YouTube Data API v3** – Provides structured access to YouTube comments.
2. **Google Colab** – For Python-based implementation.
3. **Pandas & NLP Libraries** – For data processing and analysis
4. .

**Steps for Extraction**

1. **Enable YouTube Data API** from Google Cloud Console.
2. **Obtain API Key** for authentication.
3. **Use Python script** to fetch comments from a YouTube video.

A screenshot of a computer screen

Description automatically generated

A screenshot of a computer

Description automatically generated

**3. Text Mining on Extracted Comments**

Text mining involves **cleaning, preprocessing, and transforming** textual data into a structured format.

**Preprocessing Steps**

* **Remove Punctuation & Special Characters**
* **Convert to Lowercase**
* **Remove Stopwords**
* **Tokenization & Lemmatization**

A screenshot of a computer program

Description automatically generated

A screenshot of a computer

Description automatically generated

**6. Conclusion**

This experiment demonstrated:

* **YouTube comment extraction** using **YouTube Data API**.
* **Text mining** for cleaning and preprocessing.
* **Sentiment analysis** using **machine learning classification models**.

**Insights:**

- Most of the audience thought the trail of average not too good not to bad

* Very few thought it was bad adaptation.